

## CLAIMS

We claim:

1. A system for supplying additional power to a module having an  
5 internal power supply, the system comprising:
  - a module having an associated power supply, said power supply not being designed to accommodate power sharing;
  - at least one load associated with said module, said load receiving power from said power supply;
  - 10 a variable current limited power source connected to said module supplying additional power to said at least one load; and
  - a controller;
  - whereby said variable current limited power supply is responsive to an output of said controller to vary the current limit of said variable  
15 current limited power supply.
2. The system of Claim 1, further comprising a source power supply supplying power to said variable current limited power source, said variable current limited power source comprising a boost DC/DC  
20 converter.
3. The system of Claim 2, wherein said variable current limited power source is operable such that in the event said current limit is exceeded, the voltage output of said variable current limited power supply is  
25 substantially equal to the voltage output of said source power supply, whereby said variable current limited power supply is operable to provide back up power functionality.

4. The system of Claim 3, further comprising a current limiter, said current limiter being operable to limit current flow from said source power supply during said provided back up power functionality.
- 5 5. The system of Claim 2, further comprising a battery back up module connected to supply power to said variable current limited power source in the event of a failure of said source power supply.
6. The system of Claim 1, wherein said variable current limited power  
10 source comprises a DC/DC converter.
7. The system of Claim 1, wherein said variable current limited power source and said associated power supply are connected in a wired or configuration.
- 15 8. The system of Claim 1, further comprising a monitor in communication with said controller, said monitor being operable to communicate data relating to at least one of power output of said associated power supply and power needs of said at least one load.
- 20 9. The system of Claim 8, wherein said module further comprises a local power controller, said local power controller comprising said monitor.
- 25 10. The system of Claim 9, wherein said local power controller is responsive to an output of said controller to enable said power needs of said at least one load.

11. The system of Claim 10, wherein said controller is operable in response to said communicated data to enable said power needs of said at least one load through the operation of said local power controller after varying said current limit of said variable current limited power supply.

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12. The system of Claim 1, wherein said module comprises a power over Ethernet controller, said power over Ethernet controller being associated with said at least one load.

10 13. The system of Claim 12, wherein said power over Ethernet controller has at least one powered device attached thereto, said at least one powered devices being said at least one load.

14. The system of Claim 13, wherein said power over Ethernet  
15 controller is responsive to an output of said controller to enable said power needs of said at least one powered device.

15. The system of Claim 14, wherein said controller is operable to enable power said power needs of said at least one powered device, said  
20 power needs being enabled through the operation of said power over Ethernet controller after varying said current limit of said variable current limited power supply.

16. The system of Claim 12, wherein said power over Ethernet  
25 controller is compatible with the IEEE 802.3af standard.

17. The system of Claim 1, wherein said module comprises an Ethernet switch.

18. A system for supplying additional power to a load having an associated power supply, the system comprising:

a load;

a power supply associated with said load, said power supply  
5 supplying power to said load;

a controller; and

a variable current limited power source connected to supply power  
to said load cooperatively with said power supply associated with said  
load, said variable current limited power source being responsive to an  
10 output of said controller to vary the current limit of said variable current  
limited power supply;

whereby said controller varies said current limit of said variable  
current limited power supply in response to information regarding at least  
one of said load and said power supply associated with said load.

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19. The system of Claim 18, further comprising a source power supply  
supplying power to said variable current limited power source, said  
variable current limited power source comprising a boost DC/DC  
converter.

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20. The system of Claim 19, wherein said variable current limited  
power source is operable such that in the event said current limit is  
exceeded, the voltage output of said variable current limited power supply  
is substantially equal to the voltage output of said source power supply,  
25 whereby said variable current limited power supply is operable to provide  
back up power functionality.

21. The system of Claim 20, further comprising a current limiter, said current limiter being operable to limit current flow from said source power supply during said provided back up power functionality.

5 22. The system of Claim 19, further comprising a battery back up module connected to supply power to said variable current limited power source in the event of a failure of said source power supply.

23. The system of Claim 18, wherein said variable current limited  
10 power source comprises a DC/DC converter.

24. The system of Claim 18, wherein said variable current limited power supply and said internal power supply are connected in a wired or configuration.

15 25. The system of Claim 18, further comprising a local power controller, said local power controller supplies said information regarding at least one of said load and said power supply associated with said load to said controller.

20 26. The system of Claim 25, wherein said local power controller is operable by said controller to enable said load.

27. The system of Claim 18, further comprising a local power  
25 controller responsive to an output of said controller to enable power to said load.

28. The system of Claim 27, wherein said controller is operable to enable power to said load through the operation of said local power

controller after varying said current limit of said variable current limited power supply.

29. The system of Claim 18, further comprising a power over Ethernet controller responsive to an output of said controller to enable power to said load.

30. The system of Claim 29, wherein said power over Ethernet controller is compatible with the IEEE 802.3af standard.

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31. The system of Claim 29, wherein said load is a powered device.

32. The system of Claim 31, wherein said controller is operable to enable power to said powered device through the operation of said power over Ethernet controller after varying said current limit of said variable current limited power supply.

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33. The system of Claim 31, wherein said powered device is compatible with the IEEE 802.3af standard.

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34. A method of supplying additional power to a module having an internal power supply not designed to accommodate power sharing, the method comprising:

supplying a load, said load having power needs associated thereto;  
supplying a power supply associated with said load;  
supplying a variable current limited power supply, said variable current limited power supply being connected to supply additional power to said load;

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monitoring at least one of power output of said power supply associated with said load and power needs of said load to obtain monitored data; and

5       varying the current limit of said variable current limited power supply in response to said monitored data.

35.   The method according to claim 34, further comprising:

supplying a source power supply, said source power supply supplying power to said variable current limited power supply; and

10       boosting the voltage supplied by said source power supply by said variable current limited power supply.

36.   The method of Claim 34, further comprising enabling said power needs of said load.

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37.   The method of 36, wherein said enabling is accomplished after said varying of said current limit.

38.   The method of Claim 34, wherein said load is a powered device.

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39.   The method of Claim 38, further comprising enabling said power needs of said powered device.

40.   The method of Claim 39, wherein said enabling said power needs of said powered device is accomplished after said varying of said current limit.

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41. A method of supplying additional power to a module having an internal power supply not designed to accommodate power sharing, the method comprising:

supplying a first power to a load; and

5 supplying a variable current limited power to said load, the power needs of said load being in excess of said variable current limit,

whereby said variable current limited power is fed to said load and said excess need is fed by said first power.

10 42. A method of supplying additional power to a module according to Claim 41, further comprising:

varying the current limit of said variable current limited power.

43. A system for supplying additional power and back-up power to at  
15 least one load, the system comprising:

a first power supply;

a boost converter having a first variable current limiter, said boost  
converter being connected to an output of said first power supply;

at least one load;

20 a second power supply associated with said load, said second power supply having a voltage output less than the voltage output of said boost converter; and

a second variable current limiter limiting the current flow from said first power supply to said at least one load,

25 wherein the output of said second variable current limiter is connected in a wired or configuration to cooperatively supply power with said second power supply to said at least one load, and

whereby in the event of a failure of said second power supply, the voltage output of said boost converter is substantially the same as the



voltage output of said first power supply, and power to said load is limited by said second variable current limiter.

44. The system of Claim 43, further comprising a controller operable  
5 to control said second variable current limiter.

45. The system of Claim 44, wherein said controller is further operable to control said first variable current limiter.

10 46. The system of Claim 43, wherein the limit of said second variable current limiter is set to be greater than the limit of said first variable current limiter.

15 47. The system of Claim 43, wherein the limit of said second variable current limiter is set to be at least the sum of the power being cooperatively supplied by said second power supply associated with said load and the power supplied by the limit of said first variable current limiter.

20 48. The system of Claim 43, further comprising a controller, said controller being operable to enable power to said at least one load.

25 49. The system of Claim 48, wherein said controller is operable to increase said first current limiter and said second current limiter prior to enabling power to said at least one load.